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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,528	03/30/2004	Toshimasa Kobayashi	09794353-0033	5835

26263 7590 10/19/2005

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EXAMINER

MULPURI, SAVITRI

ART UNIT

PAPER NUMBER

2812

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/813,528		KOBAYASHI ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Savitri Mulpuri		2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-39, 42, 44, 46, 48, 50, 52, 54 and 56 is/are pending in the application.
- 4a) Of the above claim(s) 40, 41, 47, 49, 51, 53, 55, 57 and 4345 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-39, 42, 44, 48, 50, 52, 54 and 56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>8/26/2004</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

This action is in response to the applicant's communication filed on 8/4/2005.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 7-11, 18-21, 42,44,46, 48, 50, 52, 54, 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Goto et al (US 2003/0020087) .

Goto et al teaches a method of producing a structured substrate '100" and a light emitting device (see fig 14-fig. 16 for light emitting devices). comprising the steps of: using a nitride type III-V compound semiconductor substrate on which a plurality of second regions " 105, 107a" of a crystal having a second average dislocation density are regularly arranged in a first region "106, 107 b" made of a crystal having a first average dislocation density so as to produce the structured substrate , the second average dislocation density being greater than the first average dislocation density, wherein the structured substrate has a light emitting device structure or active region "308-315" that does not pass through any one of the second regions "107 a" . Goto et al teaches second region has more dislocation densities than the first region (see fig. 5 A-5 B). Goto et al teaches second regions are mask pattern for growing lateral epitaxial growth.

Got et al also discloses the meeting portion "M" of 10 a and 107 b is considered as a third region and defect density is relatively larger then the first region '107 b" and lower than the second region "107 a in the meeting region and light meeting device is formed between seed crystal portion and meeting portion9see para 0099.

With respect to claims 46, 50, 54 Goto et al teach providing plurality of second regions in different directions <11-20> or <1-100> (see para 0062).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-6, 12-17, 22-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goto et al.

The formulae claimed in claim 5 and claim 6 is obvious in the invention of Goto et al because similar materials are similar as claimed invention because GaN is grown on a patterned GaN substrate. Claimed shapes of second regions (claims 10,11, 19) and the claimed distance between two adjacent second regions(claims 12-17 and the claimed diameter of the second regions and relative diameters of second and third regions (claims 22-26) are obvious because the dislocation density of second region higher than the dislocation density of the first region. Claimed defect densities in first and second and third regions are obvious in the invention of Goto et al. It would have been obvious to one of ordinary skill in the art to chose different shapes of second

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region, different distance between the second regions and different diameter of second and third regions through routine optimization to obtain reduced dislocation densities in the active region, where the device is fabricated.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-4, 7-11, 18-21, , 42, 44, 46, 48,50,52,54,46 are rejected under 35 U.S.C. 102(a) as being anticipated by Motoki et al (US 6,667,184).

Motoki et al teaches laterally growing GaN layer on the GaN substrate(see abstract detailed description) .

Claims 5-6, 12-17, 22-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motoki et al.

The formulae claimed in claim 5 and claim 6 is obvious in the invention of Motoki et al because similar materials are similar as claimed invention because GaN is grown on a patterned GaN substrate. Claimed shapes of second regions (claims 10,11, 19) and the claimed distance between two adjacent second regions(claims 12-17 and the claimed diameter of the second regions and relative diameters of second and third regions (claims 22-26) are obvious because the dislocation density of second region higher than the dislocation density of the first region. Claimed defect densities in claim 29-30 in first and second and third regions are obvious in the invention of Motoki et al . It would have been obvious to one of ordinary skill in the art to chose different shapes of second region, different distance between the second regions and different diameter of

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second and third regions through routine optimization to obtain reduced dislocation densities in the active region, where the device is fabricated.

***Double Patenting***

Claims 1, 42, 44,46,50,52,54,56 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of copending Application No. 1-79,80 .

This is a provisional obviousness-type double patenting rejection.

Claims 1,42,44,46,50,52,54,56 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,79,80 of copending Application No. 11/148,771. Although the conflicting claims are not identical, they are not patentably distinct from each other because the scope of instant claims are encompassed by the scope of the application claims, wherein specifically "growing layers nitride III-V semiconductor layer for forming light emitting device" is recited".

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ito et al teaches GaN lateral growth on GaN substrate with growth preventing structure "804".

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Savitri Mulpuri whose telephone number is 57-72-1677. The examiner can normally be reached on Mon-Fri from 8 a.m. to 4.30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt, can be reached on 571-272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Savitri Mulpuri  
Primary Examiner  
Art Unit 2812